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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,465	11/20/2003	Ching-Pang Lee	GE133636	9862
29827	7590	01/12/2005	EXAMINER	
FRANCIS L. CONTE, ESQ. 6 PURITAN AVENUE SWAMPSCOTT, MA 01907			WHITE, DWAYNE J	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,465

Applicant(s)

LEE ET AL.

Examiner

Dwayne J White

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 11 and 12 is/are rejected.
- 7) ☒ Claim(s) 3-10 and 13-25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20031120</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 are rejected under the judicially created doctrine of obviousness-type double patenting as all being unpatentable over claim 3 of U.S. Patent No. 6,832,889 in view of Lee et al. (5,967,752). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 3 of the Patent in view of '752 anticipates Application claims 1 and 2. Accordingly, Application claims 1 and 2 are not patentably distinct from Patent claim 3 in view of '752. Here, Patent claim 3 requires:

A turbine blade comprising: a hollow airfoil including a concave pressure sidewall and laterally opposite convex suction sidewall joined together at chordally opposite leading and trailing edges extending in span from a root to a tip; a dovetail integrally joined to said airfoil at said root; said airfoil further including a perforate first bridge spaced behind said leading edge and integrally joined to said pressure and suction sidewalls to define a leading edge channel therebetween; said airfoil further including an imperforate second cold bridge spaced behind said first bridge, and extending integrally from said suction sidewall chordally aft to integrally join

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said pressure sidewall before said trailing edge to define a first serpentine flow channel adjacent said suction sidewall; and said airfoil further including an imperforate third bridge disposed between said first and second bridges, and integrally joined at opposite ends to said pressure sidewall and said second bridge in a convex profile to define with said first bridge a complementary concave supply channel for channeling air through said first bridge, and to define with said second bridge a louver channel extending axially aft therealong to a distal end thereof at said pressure sidewall; wherein said pressure sidewall includes an elongate outlet slot adjacent said distal end of said second bridge disposed in flow communication with said louver channel; wherein said supply channel includes a first inlet extending through said dovetail; said louver channel includes a second inlet extending through said dovetail behind said first inlet; and said first serpentine flow channel includes a third inlet extending through said dovetail behind said second inlet. Patent claim 3 does not disclose having a platform and the three inlet channels being stacked together.

Lee et al. teach a cooled turbine airfoil having a supporting dovetail integrally joined to the airfoil root at a platform and the three inlet channels 40a-c being stacked together in the hump of the airfoil. Since claim 3 of patent '889 and Lee et al. disclose cooled airfoils and it is well known that turbine airfoils have platforms to provide a boundary for the working fluid, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the turbine blade of Patent '889 with the teachings of Lee et al., to provide a platform where the dovetail and airfoil root integrally form to provide a boundary for the working fluid. Further, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the inlet channels of Patent claim 3 with the

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teachings of Lee et al., by stacking the inlet channels in the hump of the airfoil for the purpose of providing improved cooling in the airfoil.

While Application claim 1 requires:

A turbine blade comprising: an airfoil having opposite pressure and suction sidewalls extending chordally between opposite leading and trailing edges and in span between a root and a tip; a supporting dovetail integrally joined to said airfoil root at a platform; and said airfoil further including three internal cooling circuits separated from each other by imperforate bridges and extending in span therein, and each circuit includes a respective inlet channel commencing in axially adjacent alignment in said dovetail and twisting together through said platform into said airfoil behind said leading edge and in transverse Adjacent alignment between said pressure and suction sidewalls.

And Application claim 2 requires:

Said airfoil further comprises an aerodynamic profile increasing in thickness from said leading edge to a hump of maximum thickness therebehind, and decreasing in thickness therefrom to said trailing edge; and said three inlet channels are stacked together across said hump.

Thus it is apparent that more specific Patent claim 3 in view of Lee et al. encompasses Application claims 1 and 2. Following the rationale in In re Goodman cited in the above paragraph, where Applicant has once been granted a patent containing a claim for a specific or narrower invention, Applicant may not obtain a claim for the second patent with a claim for the generic or broader invention without first submitting an Appropriate terminal disclaimer. Note that since Application claims 1 and 2 are anticipated by Patent claim 3 in view of Lee et al. and

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since anticipation is the epitome of obviousness, then Application claims 1 and 2 are obvious over patent claim 3.

Claims 11 and 12 are rejected under the judicially created doctrine of obviousness-type double patenting as all being unpatentable over claim 3 of U.S. Patent No. 6,832,889 in view of Lee et al. (5,967,752). Although the conflicting claims are not identical, they are not patentable distinct from each other because claim 3 of the Patent in view of '752 anticipates Application claims 11 and 12. Accordingly, Application claims 11 and 12 are not patentably distinct from Patent claim 3 in view of '752. Here, Patent claim 3 requires:

A turbine blade comprising: a hollow airfoil including a concave pressure sidewall and laterally opposite convex suction sidewall joined together at chordally opposite leading and trailing edges extending in span from a root to a tip; a dovetail integrally joined to said airfoil at said root; said airfoil further including a perforate first bridge spaced behind said leading edge and integrally joined to said pressure and suction sidewalls to define a leading edge channel therebetween; said airfoil further including an imperforate second cold bridge spaced behind said first bridge, and extending integrally from said suction sidewall chordally aft to integrally join said pressure sidewall before said trailing edge to define a first serpentine flow channel adjacent said suction sidewall; and said airfoil further including an imperforate third bridge disposed between said first and second bridges, and integrally joined at opposite ends to said pressure sidewall and said second bridge in a convex profile to define with said first bridge a complementary concave supply channel for channeling air through said first bridge, and to define with said second bridge a louver channel extending axially aft therealong to a distal end thereof at said pressure sidewall; wherein said pressure sidewall includes an elongate outlet slot adjacent

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said distal end of said second bridge disposed in flow communication with said louver channel; wherein said supply channel includes a first inlet extending through said dovetail; said louver channel includes a second inlet extending through said dovetail behind said first inlet; and said first serpentine flow channel includes a third inlet extending through said dovetail behind said second inlet. Patent claim 3 does not disclose having a platform and the three inlet channels being stacked together.

Lee et al. teach a cooled turbine airfoil having a supporting dovetail integrally joined to the airfoil root at a platform and the three inlet channels 40a-c being stacked together in the hump of the airfoil. Since claim 3 of patent '889 and Lee et al. disclose cooled airfoils and it is well known that turbine airfoils have platforms to provide a boundary for the working fluid, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the turbine blade of Patent '889 with the teachings of Lee et al., to provide a platform where the dovetail and airfoil root integrally form to provide a boundary for the working fluid. Further, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the inlet channels of Patent claim 3 with the teachings of Lee et al., by stacking the inlet channels in the hump of the airfoil for the purpose of providing improved cooling in the airfoil.

While Application claim 11 requires:

A turbine blade comprising: an airfoil having opposite pressure and suction sidewalls extending chordally between opposite leading and trailing edges and in span between a root and a tip; a supporting dovetail integrally joined to said airfoil root at a platform; and said airfoil further including three internal cooling circuits extending in span therein, and each circuit

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includes a respective inlet channel commencing in axially adjacent alignment in said dovetail and twisting together through said platform into said airfoil behind said leading edge and in transverse adjacent alignment between said pressure and suction sidewalls.

And Application claim 12 requires:

Said airfoil further comprises an aerodynamic profile increasing in thickness from said leading edge to a hump of maximum thickness therebehind, and decreasing in thickness therefrom to said trailing edge; and said three inlet channels are stacked together across said hump.

Thus it is apparent that more specific Patent claim 3 in view of Lee et al. encompasses Application claims 11 and 12. Following the rationale in *In re Goodman* cited in the above paragraph, where Applicant has once been granted a patent containing a claim for a specific or narrower invention, Applicant may not obtain a claim for the second patent with a claim for the generic or broader invention without first submitting an Appropriate terminal disclaimer. Note that since Application claims 11 and 12 are anticipated by Patent claim 3 in view of Lee et al. and since anticipation is the epitome of obviousness, then Application claims 11 and 12 are obvious over patent claim 3

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Liotta et al.

(5,902,093). Liotta et al. disclose a turbine blade 10 comprising: an airfoil 14 having opposite pressure 26 and suction 24 sidewalls extending chordally between opposite leading 28 and trailing 30 edges and in span between a root 32 and a tip 34; a supporting dovetail 12 integrally joined to said airfoil root at a platform 36; and said airfoil further including three internal cooling circuits 40, 46 and 50 extending in span therein, and each circuit includes a respective inlet channel 42a-c commencing in axially adjacent alignment in said dovetail and twisting together through said platform into said airfoil behind said leading edge and in transverse adjacent alignment between said pressure and suction sidewalls.

Claims 1, 2, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (5,967,752). Lee et al. disclose a turbine blade 10 comprising: an airfoil having opposite pressure and suction sidewalls extending chordally between opposite leading 20 and trailing 22 edges and in span between a root 26 and a tip 28; a supporting dovetail 14 integrally joined to said airfoil root at a platform; and said airfoil further including three internal cooling circuits 40a-c extending in span therein, and each circuit includes a respective inlet channel commencing in axially adjacent alignment in said dovetail and twisting together through said platform into said airfoil behind said leading edge and in transverse adjacent alignment between said pressure and suction sidewalls; Said airfoil further comprises an aerodynamic profile increasing in thickness from said leading edge to a hump of maximum thickness therebehind, and decreasing in

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thickness therefrom to said trailing edge; and said three inlet channels are stacked together across said hump.

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

CONCLUSION

Allowable Subject Matter

Claims 3-10 and 13-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

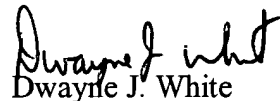
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwayne J White whose telephone number is (571) 272-4825. The examiner can normally be reached on 7:30 am to 5 pm T-F and alternate Mondays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Dwayne J. White
Patent Examiner
Art Unit 3745

DJW


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1/10/05